

Lesson 10

Water Models

How is the land impacted by its use?
What impact does the population have on land use and water quality?
How is water quality impacted by land use?

GOAL To understand that Farmington River Watershed is comprised of a variety of land uses

OBJECTIVES Students will:

- ✓ identify the land use of their particular section of the river
- ✓ create a model
- ✓ determine land use and water quality of area
- ✓ design a presentation

MATERIALS assortment of re-used and art materials for models, paper, pencils, markers

CORE CURRICULUM CONTENT STANDARDS

- Language Arts 2(2,4)
- Science 7(1,4,5), 8(2-4,6), 14(7)
- Social Studies 2(2), 9(1-5), 10(1-4, 6)11(4,5), 12(3)
- Arts 1(2), 4(1,2) 6(3)

VOCABULARY Precambrian rock, abutments, bedrock, Triassic, flatwater, gorge, floodplain, alluvial, oxbow

PROCEDURES

1. Explain that the Farmington River Watershed is comprised of different types of land use, topography, and scenery along its various sections of the river.
2. Break up students into 8 groups or teams.
3. Distribute descriptions of their particular section of the watershed. (Descriptions are listed after lesson)
4. Explain that descriptions are not complete but provide an overall understanding of land use. Have students conduct additional research if time permits.
5. Have students undertake the following activities:
 - a. Read descriptions of land.
 - b. Create a model of their section of the watershed. Use materials such as clay, cardboard, plastic, construction paper, etc.
 - c. Determine whether area is populated or not and why.
 - d. Indicate type of industry that can be supported in area.
 - e. Indicate what type of wildlife can be supported in area.
 - f. Determine what is man-made or natural in area.
 - g. Indicate whether topography of land affect and/or determine use of land.
 - h. Guess what the quality of water is and indicate why.

- i. Determine impact of land use on water quality of Farmington River.
 - j. Discuss whether humans play a role in impacting water quality.
 - k. Support all statements.
 - l. Design a presentation to rest of class.
6. When presentations are completed have students connect watershed models to display in classroom(s), and/or other areas of school.

EXTENSIONS

1. Ask students if they were requested to come up with a build-out plan for a town within the Farmington River Watershed what considerations would they take. Ask what factors they would consider when determining where development would or should take place.
2. Ask students to visit their town planner. Find out how development of a town takes place. Are there guidelines, laws, etc. that need to be considered? Is the impact on resources a consideration for a town planner?

RESOURCES

Farmington River Guide, 2002, Farmington River Watershed Association

GLOSSARY

abutment - the part of a structure that bears the weight or pressure of an arch; a structure that supports the end of a bridge

alluvial - relating to the deposits made by flowing water; washed away from one place and deposited in another; as, alluvial soil, mud, accumulations, deposits

bedrock - the solid rock that underlies loose material, such as soil, sand, clay or gravel; solid unweathered rock lying beneath surface deposits of soil

flatwater - of or on a level or slow-moving watercourse

floodplain - a plain bordering a river and subject to flooding

gorge - a deep, narrow passage with steep rocky sides; a ravine

oxbow - a U-shaped bend in a river and the land within such a bend of a river

Precambrian rock - rock traces belonging to the geologic time period between Hadean Time and the Cambrian Period, often subdivided into the Archean and Proterozoic eras, comprising most of the earth's history and marked by the appearance of primitive forms of life

Triassic - of or belonging to the geologic time, system of rocks, or sedimentary deposits of the first period of the Mesozoic Era, characterized by the diversification of land life, the rise of dinosaurs, and the appearance of the earliest mammals

SPECIAL LAND-USE CONSIDERATIONS IN DIFFERENT SECTIONS OF THE FARMINGTON RIVER WATERSHED

1. **From Otis, MA to Colebrook, CT**
 - **Steep ridges**
 - **Big boulders**
 - **Vertical cuts in bedrock overlooking Colebrook Reservoir**
 - **Wintertime – huge accumulation of ice along the rocks**
 - **State Forests**
 - **Most rigorous and challenging section (rapids)**
 - **Bridge**
 - **reservoir**

2. **Goodwin Dam, Hartland to New Hartford, CT**
 - **Dam**
 - **Hitchcock Chair Factory, Inn**
 - **“wild and scenic” designation**
 - **hemlock forest**
 - **stone bridge abutments**
 - **High Bank, rapids**
 - **Ski Sundown**
 - **Old Precambrian rock**
 - **forests**

3. **Satan’s Kingdom, New Hartford to Collinsville**
 - **Upper Collinsville Dam**
 - **High iron bridge**
 - **Original buildings of Collins Company – dated 1826**
 - **Indian Hill**
 - **Bedrock steps – Indian fishing rocks**
 - **Sand bars**
 - **Cherry Brook enters Farmington River**
 - **Ancient Triassic rock**
 - **Companies**

4. **Burlington to Farmington**
 - **Roaring Brook**
 - **Flatwater stretches**
 - **Restaurants**
 - **White church steeple**
 - **Hiking trails/soccer fields**
 - **Pequabuck River**
 - **Bridge**
 - **Lower Collinsville Dam**
 - **State forest**

5. **Farmington to Simsbury**
 - **Flatwater**
 - **Floodplain**
 - **Golf courses**
 - **Ruins of Farmington Canal**
 - **Talcott Mountain**
 - **Largest tree in Connecticut**
 - **Historical bridges**
 - **Salmon Brook enters**
 - **Meadows**
 - **Opening in traprock cliff**
 - **Restaurants**
 - **Oxbow**
 - **State forest**

7. **Tariffville to Windsor**
 - **Gorge**
 - **Bridge**
 - **Old lace factory**
 - **Rapids**
 - **Big drops**
 - **Old dam abutements**
 - **Reservoir**
 - **Trails**
 - **Parks**

8. **Rainbow Reservoir to Connecticut River**
 - **Dam**
 - **Fish ladder**
 - **Bridges**
 - **Flatwater and rapids**
 - **Hydroelectric company**
 - **Alluvial deposits**
 - **Trails/park**
 - **industry**